

REMARKS

Restriction requirement

Applicant confirms the election of group I, claims 11 to 17.

The claims of the non-elected group, claims 18 to 30, have been canceled without prejudice by this amendment.

Information Disclosure Statement

Applicant submits herewith a PTO 1449 listing the Japanese references discussed in the specification of the present application, together with copies of the references. The relevance of these references is discussed in the specification, and copies of published English language abstracts of the references are also submitted herewith to aid in assessing their relevance.

These references are not believed to have any impact on the patentability of the claims herein, but are being submitted simply to ensure that the record reflects beyond any question that applicant has fully complied with its duty of disclosure.

A check in the amount of \$180.00 is enclosed to meet the fee for the submission of an Information Disclosure Statement at this point in prosecution. If the check is insufficient or not found, please deduct any fee necessary for entry in the record of this Information Disclosure Statement from deposit account 501659.

Prior art rejections

All claims have been rejected by the Examiner as anticipated by or obvious in view of U.S. Patent no. 6,094,941 to Fujinoki et al. Reconsideration of this rejection is respectfully requested.

Claim 11 as here amended recites a method for producing a synthetic quartz glass. The method comprises a step of incorporating hydrogen molecules into a synthetic quartz glass body by heat treating the synthetic quartz glass body at a temperature of 600°C or lower in a hydrogen-containing atmosphere in a pressure range of 1 atm or higher, but lower than 150 atm. The pressure of the atmosphere containing hydrogen is varied either continuously or stepwise in at least a part of the heat treatment, and is decreased during the heat treatment.

This method is not suggested by the prior art, and in particular, not by the Fujinoki reference of the rejection.

Fujinoki teaches a three-step method of treating glass in which the second step of the method is hydrogen doping by exposure of the glass to a hydrogen-containing atmosphere in a temperature range of 200 to 600 degrees C at 50 atm or more. See Fujinoki, col. 4, lines 21 to 41. There is no suggestion of decreasing the pressure of the hydrogen-containing atmosphere during this step. In fact, the doping step is shown in the examples to involve an increase in temperature which increases the pressure during the step.

Fujinoki also teaches a subsequent third step of heat treatment in an atmosphere of air, inert gas, hydrogen, or a mixture of air and an inert gas, or a mixture of hydrogen and an inert gas. There is no mention of the pressure of any hydrogen-containing gas used in the third step. This third heat treatment step is to be performed at a temperature greater than

that of the second step. See Fujinoki col. 13, lines 4 to 15, col. 14, lines 16 to 18.

Fujinoki does not show or suggest a heat treatment with a hydrogen-containing atmosphere wherein there is a decrease in the pressure of that atmosphere.

The Examiner has interpreted Fujinoki as potentially suggesting a change in pressure of the hydrogen-containing atmosphere by virtue of the fact that changing the environment of the quartz glass from one hydrogen atmosphere to another will require some pressure change. However, it must be understood that when the atmosphere of the second step is removed, the heat treatment of the second step is necessarily over. This therefore does not constitute a suggestion of changing the pressure of the hydrogen-containing atmosphere during the heat treatment, as claim 11 requires.

In the Office Action, the Examiner also has extrapolated from the Fujinoki reference that its third step would be performed by one of ordinary skill in the art at 1 atm, which would be a lower pressure than the pressure of the second step.

First, this conclusion runs counter to the sense of the reference. The hydrogen-atmosphere heat treatment in Fujinoki is performed in autoclave 40 shown in Fig. 4. In the examples discussed at col. 8 lines 19 et seq., the autoclave is sealed under high pressure ranging from 30 to 100 atm of hydrogen gas, and this pressure is then increased by the additional heating of the autoclave. The heat treatment at the third step of the process, being at a higher temperature than the temperature of the second step, would therefore be expected to be at an increased pressure over the second step, not a decreased pressure.

Secondly, Fujinoki's third step involves the introduction of a second, different gas mixture from that of the second step of the process. See, e.g., claim 1, col. 14, lines 1 to 11 (separately reciting "a hydrogen-containing atmosphere" in a second step, and a second

atmosphere, "an atmosphere of air, inert gas, hydrogen, a mixture of hydrogen, and an inert gas or a mixture of air and an inert gas" in a third step at line 10). In contrast, in claim 11 the hydrogen-containing atmosphere of the heat treatment is applied with a decrease in the pressure during the heat treatment. Even if the third step of Fujinoki were at a reduced pressure, it would still be a different atmosphere, and would fail to suggest the decreased pressure of the same atmosphere, as claimed.

Fujinoki therefore fails to suggest the method articulated in claim 11 as amended, and reconsideration of the rejection is respectfully requested.

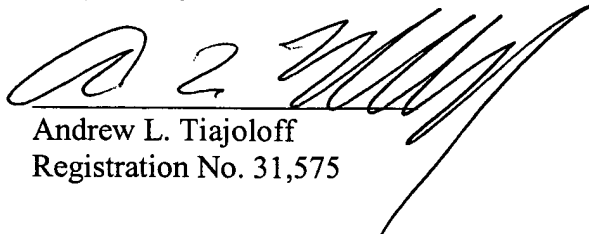
The remaining claims in the application, claims 13, 14, 16 and 17, and newly-added dependent claims 31 and 32, all depend directly or indirectly from claim 11, and therefore distinguish therewith over the prior art.

The claims herein having been shown to distinguish over the prior art, formal allowance is respectfully solicited.

Should any questions arise, the Examiner is invited to telephone attorney for applicants at 212-490-3285.

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Respectfully submitted,



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